Testimony of Brian R. Mefford, CEO of Connected Nation
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Committee on Energy and Commerce

Subcommittee on Telecommunications and the Internet

"Broadband Mapping and Data Collection"

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This testimony and additional details available at:
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Chairman Markey, Ranking Member Upton and Members of the Committee:

Thank you for the opportunity to speak with you today regarding the important issues related to broadband mapping and data collection. Connected Nation is a national non-profit organization dedicated to addressing the broadband challenges facing the United States. Connected Nation is the parent company of ConnectKentucky, our Kentucky-based organization that has served as the “demonstration project” for state-enabled broadband initiatives. It is the “Kentucky story” that I’m here to share with you today. Kentucky stands as the only state to date with an accurate map of its broadband infrastructure. This is our story.

Four years ago, Kentucky faced the same challenges that are all too common in states and communities across the country. The Commonwealth was struggling to use technology-centered solutions to address traditional challenges related to education, healthcare, and the delivery of government services.

On the economic development front, jobs in manufacturing, farming, and mining were declining at an alarming pace, with little evidence that lost opportunities were being replaced with new technology-centric ones.

The indicators and impacts of Kentucky’s technology troubles were not hard to identify. Kentucky consistently ranked low among states in terms of broadband availability and technology literacy. The number of high-tech companies doing business in the Commonwealth relative to other states was extremely low and college graduates were leaving in droves, creating a troubling “brain drain” effect.

The Challenges

The reality of Kentucky's technology challenge was troubling indeed. We realized that the foundation of broadband infrastructure was not adequate for creating solutions that could address the opportunities of a new day: not adequate to provide widespread access to telemedicine, distance learning and e-government; not adequate for growing or attracting entrepreneurs and industry; not adequate for providing more opportunities to our communities whose children were leaving to pursue opportunities elsewhere, never to return.

It was clear that the inadequacy of Kentucky's broadband infrastructure could be traced to much of the state's inability to compete in areas important in the knowledge-based economy. Broadband infrastructure had been built into the state's more populous areas, leaving more rural areas unserved. The lack of service not only created the well-termed "digital divide" for rural residents, it also made it impossible to develop statewide policies that depended upon access to broadband. For instance, a statewide e-health initiative was not realistic when nearly half of the state's physicians could not connect to broadband.

Significantly, it was discovered that broadband *availability* was only part of the problem. The remainder of the challenge related to the actual *use* of broadband-related technology. Any resulting turn-around strategy had to be comprehensive in nature: addressing both supply and demand side challenges.

ConnectKentucky set out to identify the barriers that were inhibiting broadband availability and use. In terms of availability there were a series of issues that needed to be addressed. First, very little data existed to allow us to identify the specific extent of the broadband gaps in Kentucky. Providers didn't know, policy makers didn't know and communities themselves didn't know. Second, the regulatory environment was not conducive to private investment,

causing little investment to be made in more risky areas. Third, the business case for providers to enter unserved areas was challenging at best: the cost of entry was often prohibitive and take rates were expected to be low.

Challenges related to the use of technology included: lack of appreciation for the value of technology at the household level, lack of cohesive interest in technology at the local level, and lack of initiatives to encourage awareness and build interest in technology at the state level.

The Approach

Leveraging the collaborative nature of the public-private partnership structure, ConnectKentucky developed and implemented a plan to address Kentucky's broadband challenge. Key elements vital to the success of the plan include:

Mapping:

To create a picture of where broadband did and did not exist, ConnectKentucky created broadband inventory maps. The maps provided the vehicle for "purpose driven data collection" to help promote the use of current service while also identifying where specific gaps remain. Data layers (from the census bureau and other state-level data sources) provide additional demographic and community information to identify density, planned development, and existing public assets, such as water towers, that could be used to plan for extending broadband coverage.

To create the broadband inventory maps, data are collected from all providers and account for service availability, based on technology type. For example, fixed wireless mapping

utilizes a number of variables as inputs to produce propagation depictions that provide a geographic representation of where the signal actually reaches based on terrain, ground clutter, etc.

Data Collection, Analysis and Reporting:

As detailed above, ConnectKentucky collects service-level data from all broadband providers in order to produce broadband inventory maps and provide corresponding gap analyses. Additionally, ConnectKentucky serves as Kentucky's broadband data clearinghouse with the intent to:

- Generate market intelligence for unserved areas at a local level to help providers identify investment opportunities and to effectively lower the cost of market entry;
- Provide a central resource for policy makers who are evaluating regulatory matters, assessing incentive programs, and generally tracking the status of broadband deployment and use in Kentucky;
- Collection and reporting of data from household and business surveys assist in verifying "supply side" data, tracking progress, identifying barriers and opportunities, and tracking household-specific data related to speed of service, price points, etc.

Demand Creation and Aggregation:

Local "eCommunity Leadership Teams" create local technology strategies across multiple sectors including: local government, business and industry, education, healthcare, agriculture, tourism, libraries, and community-based organizations. The local teams generate and aggregate demand by identifying ways to better leverage technology in local communities. Additionally, grassroots awareness campaigns are channeled through

eCommunity teams, creating a local response to increasing awareness of the value of technology.

Public-Private approach to overcoming obstacles:

ConnectKentucky's structure is self-replicating in terms of its ability to address challenges in a manner that is flexible and customizable to local realities. The public-private partnership approach allows for the development of initiatives that solve deployment challenges locally, promote the value of technology in proper context, improve technology literacy, and drive adoption among households, businesses and communities.

The Results

ConnectKentucky has provided Kentucky with a comprehensive approach that accounts for both supply and demand realities in a manner that respects consumer needs and encourages market-based results. With an accurate map of broadband services and gaps, coupled with efforts to improve take rates, private sector providers have invested aggressively in the Kentucky market and consumers and communities have reaped the benefits. Data collection and reporting by ConnectKentucky is "purpose-driven", and the purpose is to achieve ubiquitous broadband coverage that enables job creation and growth, advanced education, improved healthcare and more efficient government services.

Over the implementation of this initiative, Kentucky has experienced a technology turnaround. Consider the following successes that have occurred during the last two years:

- Broadband inventory maps have been created for the entire state, promoting current coverage and allowing providers to better target unserved areas;
- **Broadband availability has increased from 60 percent to 93 percent** of households able to subscribe (on track to reach 100% by the end of 2007), representing 504,000 previously unserved households and more than 1.2 million residents that can now access broadband;
- **Broadband use at home has increased 73 percent**, a rate that has led the nation;
- Broadband use among Internet connected businesses rose from 65 percent to 85 percent;
- **Home computer ownership grew by 20 percent** while the national average rose by 4 percent;
- More than **$650 million in private capital has been invested in Kentucky** (unprecedented);
- Nearly **2,000 home computers have been distributed** to the homes of underprivileged Kentucky students through the No Child Left Offline program;
- **eCommunity Leadership Teams have been established in every Kentucky county** creating grassroots technology growth plans across nine sectors;
- More than **70 percent of Kentucky counties now operate or are in the process of constructing a meaningful web presence** for e-government and online citizen services, up from about 30% just two years ago;
- **22,000,000+ positive media impressions** have covered Kentucky technology growth;

The Impact

Over the last two years, more than 14,500 total technology jobs have been created in Kentucky[1]. During the same two year period, **in the IT sector alone, Kentucky jobs have grown at a rate 31 times the national growth rate: 3.1 percent for Kentucky versus 0.1 percent nationally**, representing a reversal from years prior to program implementation.

Technology literacy has improved, the number of high tech jobs has increased, and Kentucky communities are enjoying the return of their children. Consider these improvements related to Kentucky's "brain drain" challenge:

- Today, 86% of all Kentucky graduates remain in Kentucky to live and work—an 18% increase since 2000;
- Since 2000, there has been a 50% increase in the number of out-of-state students who remain in Kentucky;
- Among graduates who are Kentucky natives, 95% of them now remain in Kentucky;
- The percent of doctoral degree students who stay in Kentucky has nearly doubled (from 27% to 52%).

Today in Kentucky entrepreneurs are thriving; businesses of all sizes are finding an environment ripe for growth; rural communities are finding ways to diversify and provide attractive opportunities for their children; primary schools and universities are connected as never before, providing content and curriculum previously not possible. In short, as the broadband challenge has been addressed a strong foundation was established to allow for technology-centric solutions and improvements to flourish.

[1] Bureau of Labor Statistics (BLS) for two year period beginning January 2005 through December 2006. Includes jobs created in the following NAICS sectors: information; finance; professional, science, and technical; management; and healthcare. Sectors are comprised primarily of high tech jobs and all jobs within these sectors are "technology based". Other sectors include additional technology jobs; however, these jobs are aggregated with other non technology jobs, such as in the manufacturing sector. As BLS does not disaggregate these jobs, they could not be included in the figure above, which results in an understatement in the reporting of technology jobs.

Conclusion

Kentucky has demonstrated the importance of the national broadband discussion and the relevance of technology to America's ability to compete. Based on our experience in Kentucky, we know that technology diminishes the significance of distance. In the past, opportunities to thrive have depended largely upon one's proximity to major markets. Technology has made the distance factor irrelevant. In other words, with the availability of cutting edge technology, entrepreneurs and businesses can thrive wherever they choose to locate. Technology has become the great equalizer for individuals and communities alike – creating opportunities, fueling better education, higher quality healthcare, and better quality of life – regardless of where an individual or community happens to be located.

This same dynamic however represents both a huge opportunity and major threat for the United States. Other countries have invested in broadband towards achieving universal access – and like Kentucky, they have managed to leapfrog their previous standings to become a competitive force. It is the hope of Connected Nation that this Congress can call the country to arms on this issue by conveying the true sense of urgency for action. The nation needs to know where it stands with regard to broadband deployment. We need a map that shows us not only where broadband is, but where it can take us. The nation deserves a model that leverages the best of both the private and public sectors for the sake of strong communities. No doubt, it is a challenge of historic proportion. Just as previous times called for a national response to the needs for railroads, highways, electricity, and telephone service – the broadband challenge calls for an aggressive and comprehensive response to ensure that America remains the dominant leader in the global economy.

Thank you, Mr. Chairman, for the opportunity to present to this esteemed committee.